AMENDMENT TO THE SPECIFICATION

Kindly amend the specification at page 3, line 19, through page 4, line 12, as follows:

In one aspect, the composition is an osteoinductive powder including demineralized bone matrix (DBM) particles, a calcium phosphate powder, and, optionally, a biocompatible cohesiveness agent (e.g., a binder). The DBM particles may be of various sizes and shapes. In a preferred embodiment, the calcium phosphate powder includes an amorphous calcium phosphate and a second calcium phosphate source. In some embodiments, the amorphous calcium phosphate and the second calcium phosphate source have an average crystalline domain size of less than 100 nm. Such crystalline domain sizes may be obtained by, for example, high energy milling processes. In some embodiments, the second calcium phosphate source is an acidic calcium phosphate. In other embodiments, the osteogenic powder, upon hydration with a physiologically acceptable fluid, self-hardens to form a poorly-crystalline apatitic calcium phosphate. In yet other embodiments, the poorly-crystalline apatitic calcium phosphate has a Ca/P ratio of less than 1.67. A particularly preferred osteogenic powder includes demineralized bone matrix (DBM) particles, a combination of calcium phosphate powders, and, optionally, a biocompatible cohesiveness agent (e.g., a binder), in which the combination of calcium phosphate powders react, when admixed with a physiologically acceptable liquid, to form an apatitic calcium phosphate having an overall Ca/P ratio in the range of about 1.0 to about 1.67 ~~1.0-1.67~~, preferably 1.3-1.65, more preferably 1.4-1.6, and most preferably close to that of naturally-occurring bone, that is in the range of 1.45 to 1.67. In other embodiments of the osteoinductive powder, the DBM particles are present in an amount of less than about 60 wt%,

less than about 50 wt%, less than about 20 wt% (e.g., about 15 wt %), or the DBM particles are present in an amount in the range of about 1 to about 60 wt%. In yet other embodiments, the DBM particles have a particle size of less than about 850 μm (e.g., less than about 125 μm), for example, in the range of about 125 to about 850 μm or in the range of about 53 to about 125 μm.

Please also amend the specification at page 19, line 21, through page 20, line 11, as follows:

The biocompatible cohesiveness agent may be added to the bone implant material in varying amounts and at a variety of stages during the production of the powder component. If included, the biocompatible cohesiveness agent is present in an amount less than or equal to 20 weight percent of the powder component (e.g., in an amount of less than about 1 wt%, 5 wt%, or 10 wt%, or in an amount in the range of about 1 to about 20 wt%). In particular embodiments, the biocompatible cohesiveness agent is present in an amount of about 10 weight percent of the powder component. In a preferred embodiment, the implant material includes DBM in an amount of about 50 weight percent, a calcium phosphate component in an amount of about 45 weight percent, and a cohesiveness agent in an amount of about 5 weight percent. The biocompatible cohesiveness agent may be added to the calcium phosphate sources before or after high energy milling. The biocompatible cohesiveness agent may be added to the DBM particles as a solution; for example, the cohesiveness agent can coat the DBM particles. The biocompatible cohesiveness agent may be added to the osteoinductive powder including the

DBM particles and the calcium phosphate powder. Those of skill in the art will be able to determine the amount of cohesiveness agent and method of inclusion required for a given application.